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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/722,094

11/25/2003

Kie Y. Ahn

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EXAMINER

KIM, PAUL D

ART UNIT

PAPER NUMBER

3729

MAIL DATE

DELIVERY MODE

07/11/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/722,094

Applicant(s)

AHN ET AL.

Examiner

Paul D. Kim

Art Unit

3729

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 11 April 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-50 is/are pending in the application.
- 4a) Of the above claim(s) 1-12 and 31-33 is/are withdrawn from consideration.
- 5) ☒ Claim(s) 18-21, 43 and 44 is/are allowed.
- 6) ☒ Claim(s) 13-17, 22-30, 34-42 and 45-48 is/are rejected.
- 7) ☒ Claim(s) 49 and 50 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

This office action is a response to the amendment filed on 4/11/2007.

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 13, 16, 17, 34, 39-42 and 45-48 are rejected under 35 U.S.C. 102(b) as being anticipated by Mizoguchi et al. (US PAT. 5,801,521).

Mizoguchi et al. teach a process of forming an inductive element comprising steps of: depositing a layer of magnetic material (30A) on a substrate (10); depositing a non-magnetic insulating layer (20A) on the magnetic material layer; forming a substantially circular open inductor pattern (40A, 40B) on the non-magnetic insulating layer and above the magnetic material layer as shown in Fig. 24, the open inductor pattern having an outer edge, wherein the open inductor pattern is unconnected to the layer of the magnetic material and wherein the substantially circular open inductor includes a first conductive pattern (40A) and a second conductive pattern (40B) over the first conductive pattern and coupled to the first conductive pattern as shown in Fig. 24; depositing a second non-magnetic insulating layer (20C) on the open inductor pattern, wherein the second non-magnetic insulating layer is between the first conductive pattern and the second conductive pattern as shown in Fig. 24; and depositing a second

magnetic material layer (30C) deposited on the second non-magnetic insulating layer as shown in Fig. 24 (see also col. 16, lines 33-50).

As per claim 16 the non-magnetic insulating layer is made of SiO₂.

As per claim 17 the second insulating layer is made organic such as polyimide (see also col. 11, lines 45-48).

As per claim 40 a third conductive pattern is formed over the second conductive pattern and coupled to the second conductive pattern as shown in Fig. 30.

As per claims 41, 42, 45 and 46 the second non-magnetic insulating layer directly contacts the non-magnetic insulating layer as shown in Fig. 60.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 14 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mizoguchi et al.

Mizoguchi et al. teach all of the limitations as set forth above except materials used for the open inductor pattern. The open inductor pattern of Mizoguchi et al. is made of conductive material. At the time the invention was made, it would have been an obvious matter of design choice to a person of ordinary skill in the art to apply gold or aluminum-copper as recited in the claimed invention because Applicant has not

disclosed that gold or aluminum-copper as recited in the claimed invention provides an advantage, is used for a particular purpose, or solves a stated problem. One of ordinary skill in the art, furthermore, would have expected Applicant's invention to perform equally well with Mizoguchi et al. because gold or aluminum-copper for the substantially circular open inductor as recited in the claimed invention would perform equally well with the conductive material of Mizoguchi et al. such as capable of conducting current. Therefore, it would have been an obvious matter of design choice to modify the conductive material for the substantially circular open inductor of Mizoguchi et al. to obtain the invention as specified in claims 14 and 15.

5. Claims 22-30 and 35-38 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mizoguchi et al. in view of Walsh (U SPAT. 6,233,834).

Mizoguchi et al. teach all of the limitations as set forth above except materials used for the magnetic material including NiFe alloy (as per claim 22) or iron (as per claims 25 and 37). In the manufacturing the inductive element, the magnetic material of the inductive element such as NiFe (as per claims 22 and 26) is used, which is well known in the art. In addition, Walsh teaches a process of making an inductive component using magnetic material made of NiFe (80/20) in order to provide a high permeability for maximizing inductance. Therefore, it would have been obvious at the time the invention was made to a person having ordinary skill in the art to modify the magnetic material used for the second magnetic material of Kitamura et al. by magnetic

material made of NiFe (80/20) as taught by Walsh in order to provide a high permeability for maximizing inductance.

In addition, Mizoguchi et al. also teach the substrate made of semiconductor material such as silicon. At the time the invention was made, it would have been an obvious matter of design choice to a person of ordinary skill in the art to apply substrate materials as recited in the claimed invention because Applicant has not disclosed that the substrate materials as recited in the claimed invention provides an advantage, is used for a particular purpose, or solves a stated problem. Therefore, it would have been an obvious matter of design choice to modify the semiconductor material for the substantially circular open inductor of Mizoguchi et al. to obtain the invention as specified in claims 23, 26 and 27.

As per claims 24, 30 and 38 the second insulating layer of Mizoguchi et al. is made organic such as polyimide (see also col. 11, lines 45-48).

As per claims 29 and 36 the non-magnetic insulating layer of Mizoguchi et al. is made of SiO₂.

Allowable Subject Matter

6. Claims 18-21, 43 and 44 are allowed.
7. Claims 49 and 50 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

8. The following is a statement of reasons for the indication of allowable subject matter: The prior art of record fails to disclose the claimed invention such as the second magnetic material layer is between the first conductive pattern and a second conductive pattern. It is not obvious taken alone or in combination of other references fairly to suggest the claimed invention.

Response to Arguments

9. Applicant's arguments filed 4/18/2006 have been fully considered but they are not persuasive. Applicant argues that the prior art of record fails to describe the claimed invention such as "the first conductive pattern includes outermost segments of the first conductive pattern with a region interior thereto that is free of additional segments, and wherein the second conductive pattern includes outermost segments of the second conductive pattern with a region interior thereto that is free of additional segments" as recited in claims 13, 18, 22, 23, 26, 27, 34 and 39. However, the amended phrase was not described in the specification as originally filed and appears to be new matter.

Conclusion

10. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

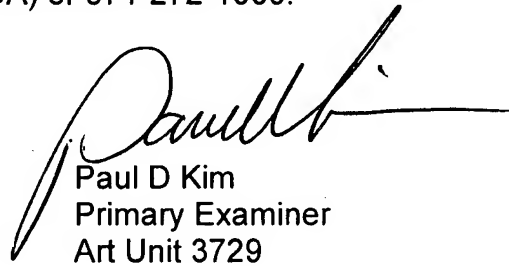
A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Paul D. Kim whose telephone number is 571-272-4565. The examiner can normally be reached on Monday-Thursday between 6:00 AM to 2:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Peter Vo can be reached on 571-272-4690. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 3729

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Paul D Kim
Primary Examiner
Art Unit 3729